

Artificial Intelligence

Assignment 5

Nakul Thureja
2020528

Factors Used:

- CGPA
- Semester
- Interests

Code Snippet:

I have just added the following snippet in the assignment 1 code to run the code from the facts in the file.

```
begin(X):-  
    nl,write("IIIT Delhi Elective Advisory System:- "),nl,  
    consult("facts.txt"),!,  
    branches(A),branch(A),!,  
    grades(B),grade(B),!,  
    sems(C),sem(C),!,  
    interests(D),interest(D),!,  
    cgpa(X1),stream(Y1),semester(K),career(L),courseList(X1,Y1,K,L),!,nl,  
    X="DONE".
```

And removed the recursive code to change interests.

Logic:

I am 1st generating facts using NLP rules in python and then calling the prolog file using the pyswip library.

To generate facts I have used nltk library and tokenized the words and compared them with the keywords.

Python Code Snippet:

```
# Nakul Thureja
# ROLL NO :- 2020528
# BRANCH :- CSE
# AI Assignment 5

import nltk
import pyswip

prolog = pyswip.Prolog()
prolog.consult("NakulThureja_2020528_A1.pl")

f = open("facts.txt", "w")
print("Elective Advisory System (NLP)")
sen1 = input("Enter your name and branch\n").lower()
tokens = nltk.word_tokenize(sen1)
branch = 1
for token in tokens:
    if (token == "cse"):
        branch = 1
        break
    elif (token == "csam"):
        branch = 2
        break
    elif (token == "csai"):
        branch = 3
        break
    elif (token == "csd"):
        branch = 4
        break
    elif (token == "csb"):
        branch = 5
        break
    elif (token == "csss"):
        branch = 6
        break
    elif (token == "ece"):
        branch = 7
        break

f.write("branches (" + str(branch) + ") .\n")

sem = 1
sen2 = input("\nWhat semester are you in?\n")
new_sen2 = nltk.word_tokenize(sen2)
sem_dict = {
```

```

    "1": 1, "2": 2, "3": 3, "4": 4, "5": 5, "6": 6, "7": 7, "8": 8,
    "1st": 1, "2nd": 2, "3rd": 3, "4th": 4, "5th": 5, "6th": 6, "7th": 7, "8th": 8,
    "first": 1, "second": 2, "third": 3, "fourth": 4, "fifth": 5, "sixth": 6,
    "seventh": 7, "eight": 8
}

for word in new_sen2:
    if (word.lower() in sem_dict):
        sem = sem_dict[word.lower()]

f.write("sems("+str(sem)+").\n")

sen3 = input("\nWhat is your current grade?\n")
new_sen3 = nltk.word_tokenize(sen3)
grade_dict = {
    "0": 6, "1": 6, "2": 6, "3": 6, "4": 6, "5": 6, "6": 5, "7": 4, "8": 3, "9": 2,
    "10": 1,
    "good": 3, "bad": 6, "average": 5, "excellent": 1, "poor": 6
}
grade = 3
for word in new_sen3:
    if (word.lower() in grade_dict):
        grade = grade_dict[word.lower()]

f.write("grades("+str(grade)+").\n")

print("\nInterests")
flag = True
if(flag):
    sen4 = input("Are you interested in the field of Machine Learning / Artificial Intelligence\n")
    sen4 = sen4.lower()
    if ('y' in sen4 and flag):
        f.write("interests(1).\n")
        flag = False

if(flag):
    sen4 = input("Are you interested in the field of Cyber Secuirty / Networks\n")
    sen4 = sen4.lower()
    if ('y' in sen4 ):
        f.write("interests(2).\n")
        flag = False

if(flag):
    sen4 = input("Are you interested in the field of Computer Architechture\n")
    sen4 = sen4.lower()
    if ('y' in sen4 and flag):

```

```
f.write("interests(3).\n")
flag = False

if(flag):
    sen4 = input("Are you interested in the field of UI-UX Designer\n")
    sen4 = sen4.lower()
    if ('y' in sen4 and flag):
        f.write("interests(4).\n")
        flag = False

if(flag):
    sen4 = input("Are you interested in the field of Computational Biology\n")
    sen4 = sen4.lower()
    if ('y' in sen4 and flag):
        f.write("interests(5).\n")
        flag = False

if(flag):
    sen4 = input("Are you interested in the field of Electronics\n")
    sen4 = sen4.lower()
    if ('y' in sen4 and flag):
        f.write("interests(6).\n")
        flag = False

if(flag):
    sen4 = input("Are you interested in the field of Mathematics and Computing\n")
    sen4 = sen4.lower()
    if ('y' in sen4 and flag):
        f.write("interests(7).\n")
        flag = False

if(flag):
    print("You aren't interested in any fields, system encourages you to take courses in
the field of AI/ML as it is growing field\n")
    f.write("interests(1).\n")
    flag = False

f.close()
query = list(prolog.query("begin(X)."))
print(query[0])
```

Sample Run 1:

Running the file to generate facts and run the prolog program.

```
• nakul@nakul-IP5:~/Desktop/AIA5$ python3 aia5.py
Elective Advisory System (NLP)
Enter your name and branch
hello, my name is nakul and i am from cse branch.

What semester are you in?
I am in 5th sem currently.

What is your current grade?
i have an excellent grade.

Interests
Are you interested in the field of Machine Learning / Artificial Intelligence
nope
Are you interested in the field of Cyber Secuirty / Networks
nah
Are you interested in the field of Computer Architechture
yup

IIIT Delhi Elective Advisory System:-
Your course courses this semester are:
1. CN
2. TCOM + EVS

Have you completed your SSH courses??
SSH courses this Semester offered are:
1. CMM
2. CT
3. EComm
4. EK
5. ETB
6. FF
7. GSM
8. GMT
9. KPCC
10. ME
11. NDM
12. OOPD
13. PT
14. SSSE
15. TFW
16. USPP

Are you satisfied?
Do you want the system to recommend courses based on your Interest (Y=1/N=0)1.

Based on your interests these are the best suited basic courses for you:
1. CA

The System highly recommends you to pursue these basic courses before moving up to advanced courses in the same field
Have you done these (Y=1,N=0): |: 1.

Based on your interests these are the best suited advanced courses for you:
1. CMP

Hope you Enjoyed. All The Best for your sem :)
{'X': b'DONE'}
○ nakul@nakul-IP5:~/Desktop/AIA5$
```

Generated Facts:

```
1 branches(1).
2 sems(5).
3 grades(1).
4 interests(3).
5
```

Sample Run 2:

Running the file to generate facts and run the prolog program.

```
{ 'X': b'DONE' }
nakul@nakul-IP5:~/Desktop/AIA5$ python3 aia5.py
Elective Advisory System (NLP)
Enter your name and branch
hello my name is nakul and i am from CSAM branch.

What semester are you in?
I am in sem 4.

What is your current grade?
I have a 9 gpa

Interests
Are you interested in the field of Machine Learning / Artificial Intelligence
y

IIIT Delhi Elective Advisory System:-
Your course courses this semester are:
1. AAI
2. ADA
3. M4
4. TOC

Have you completed your SSH courses??
SSH courses this Semester offered are:
1. EI
2. ITS
3. STS

Are you satisfied?
Do you want the system to recommend courses based on your Interest (Y=1/N=0)0.
Hope you Enjoyed. All The Best for your sem :)
{'X': b'DONE'}
```

Generated Facts:

```
CS.LAL
branches(2).
sems(4).
grades(2).
interests(1).
```

Sample Run 3:

Running the file to generate facts and run the prolog program.

```
{ 'X': b'DONE' }
● nakul@nakul-IP5:~/Desktop/AIA5$ python3 aia5.py
Elective Advisory System (NLP)
Enter your name and branch
nakul thureja csb branch

What semester are you in?
8th semester

What is your current grade?
i have a grade point of 8

Interests
Are you interested in the field of Machine Learning / Artificial Intelligence
n
Are you interested in the field of Cyber Secuirty / Networks
no
Are you interested in the field of Computer Architechture
nah
Are you interested in the field of UI-UX Designer
not at all
Are you interested in the field of Computational Biology
yuppp

IIIT Delhi Elective Advisory System:-
Your course courses this semester are:

Have you completed your SSH courses??
SSH courses this Semester offered are:
1. AP - Attention and Perception
2. AST
3. CP
4. EI
5. ITS
6. LM
7. STS
8. SoI
9. TOE

Are you satisfied?
Do you want the system to recommend courses based on your Interest (Y=1/N=0)1.

Based on your interests these are the best suited basic courses for you:
1. ACB
2. BDMH
3. BStats
4. CADD

The System highly recommends you to pursue these basic courses before moving up to advanced courses in the same field
Have you done these (Y=1,N=0): |: 0.
Great!!
Hope you Enjoyed. All The Best for your sem :)
{'X': b'DONE'}
```

Generated Facts:

```
= facts.txt
1  branches(5) .
2  sems(8) .
3  grades(3) .
4  interests(5) .
5  
```